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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,748	09/15/2003	Zahilya Austin	M923.12-0001	1552

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KINNEY & LANGE, P.A.  
THE KINNEY & LANGE BUILDING  
312 SOUTH THIRD STREET  
MINNEAPOLIS, MN 55415-1002

EXAMINER

KINKEAD, ARNOLD M

ART UNIT PAPER NUMBER

2817

DATE MAILED: 04/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/662,748

Applicant(s)

AUSTIN ET AL.

Examiner

Arnold M. Kinkead

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 0204-0305

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_

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## DETAILED ACTION

### *Specification*

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, lines 7, 12, and 16, "said operating surface" lacks proper antecedent basis, similarly, for claims 4, 6, 9, 13, and 18.

### *Claim Rejections - 35 USC § 102*

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

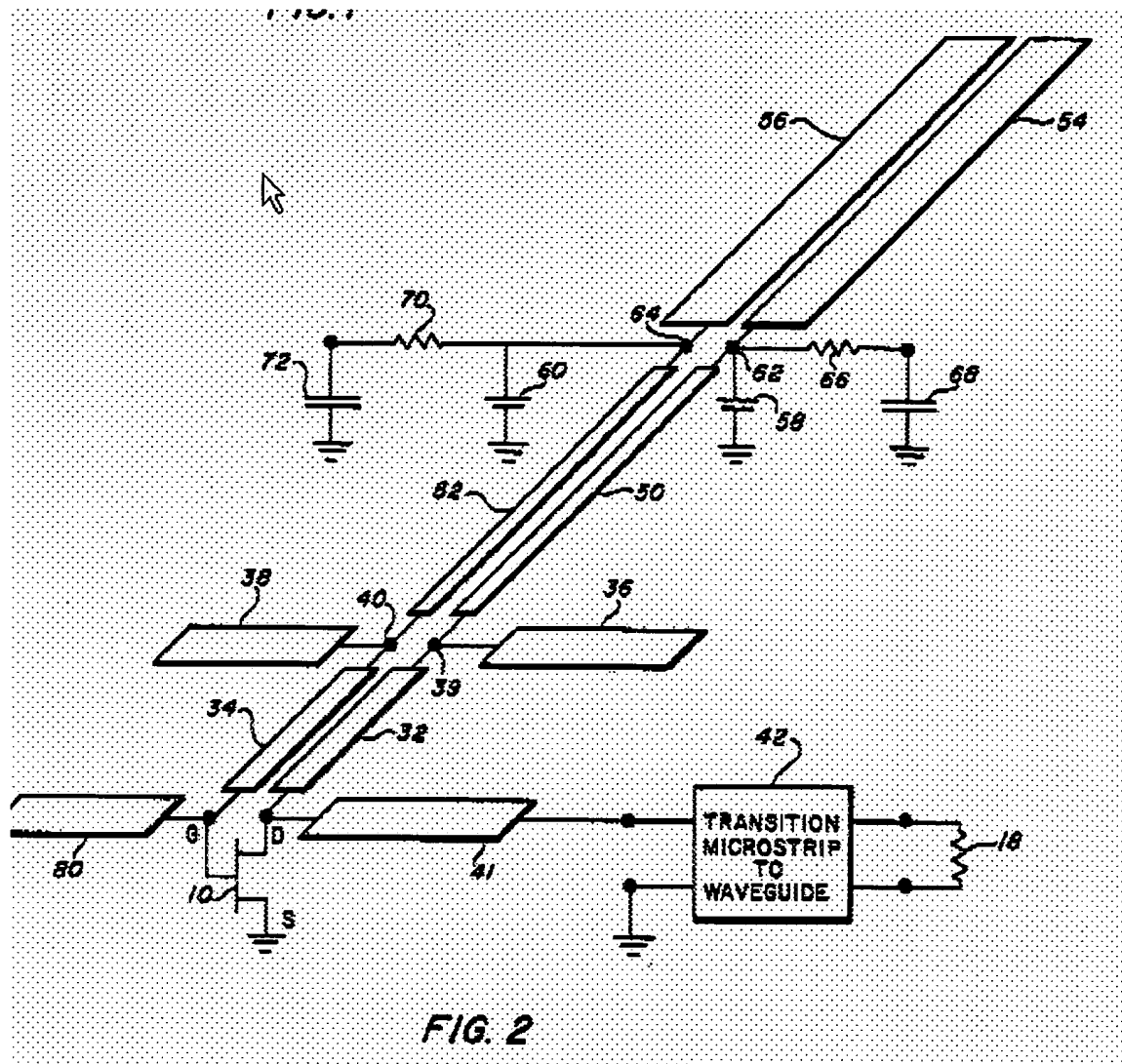
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, ~~2, 4, 5, 18~~, 18, 19, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Rauscher(US 4,518,931).

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As shown in figure 2 below, the reference by Rauscher discloses a feedback oscillator formed on an integrated circuit. As noted in col. 8, lines 60-65, there is a semiconductor material substrate with ground plane on one side with an opposing operational side. An amplifier (10, see figure below) with input(G) and output terminals(D), is provided on the semiconductor material substrate, on the operational side; said amp providing output signals representative of signals on the input side. A coupler including elements(32 and 34) are shown. Input conductor(32) is oblong, with selected length and coupled to amplifier output. An oblong output conductor(34) is shown in parallel and closely adjacent to input conductor. It is coupled the amp input (G). A transfer system(54,56) electrically coupling the coupler output, is shown with oblong input conductor(54) and oblong output conductor(56), both free of connections at one end, respectively. The transistor amplifier(10) has first and second terminating regions(D,S), and the (D) termination is coupled to the amp output. A conductive path exists between the (D and S) region and is controlled by the control region(G) on the input side of the amp.



Claim

**Rejections - 35 USC § 103**

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 2, 10, 11, 15, 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rauscher(above) in view of Boudiaf et al(IEEE article 2001, cited by applicants).

As shown in figure 2 below, the reference by Rauscher discloses a feedback oscillator formed on an integrated circuit. As noted in col. 8, lines 60-65, there is a semiconductor material substrate with ground plane on one side with an opposing operational side. An amplifier (10, see figure below) with input(G) and output terminals(D), is provided on the semiconductor material substrate, on the operational side; said amp providing output signals representative of signals on the input side. A coupler including elements(32 and 34) are shown. Input conductor(32) is oblong, with selected length and coupled to amplifier output. An oblong output conductor(34) is shown in parallel and closely adjacent to input conductor. It is coupled the amp input (G). A transfer system(54,56) electrically coupling the coupler output, is shown with oblong input conductor(54) and oblong output conductor(56), both free of connections at one end, respectively. The transistor amplifier(10) has first and second terminating regions(D,S), and the (D) termination is coupled to the amp output. A conductive path exists between the (D and S) region and is controlled by the control region(G) on the input side of the amp.

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The reference does not suggest use of gallium arsenide substrate nor the use of HEMT or PHEMT transistor, however, the reference by Boudiaf et al is relied upon to show that these are conventional ideas, in VCO applications to increase speed and reliability and for compact size considerations, see introduction. The use of PHEMT(pseudomorphic) active element in a feedback oscillator is shown(fig. 1a).

In light of the above it would have been obvious for one of ordinary skill in the art to have recognized that the substrate material and transistor type used in Rauscher could have been implemented with the gallium arsenide substrate with (P)HEMT amplifier, as noted in Bouadiat et al. to allow a fast and more compact feedback oscillator to meet design considerations. The essential operation of the amp and coupling/transfer means being improved and made more reliable.

***Allowable Subject Matter***

9. Claims 3,6,7,8,9,12-14,16,17, and 20 , 22-24 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The examiner could not find fair suggestion for the capacitor coupling, inductor coupling, and conductive pads...

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnold M. Kinhead whose telephone number is 571-272-1763. The examiner can normally be reached on Mon-Fri, 8:30 am -5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on 571-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Arnold M Kinkead

Primary Examiner

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Arnold Kinkead

April 13, 2005